

CLAIMS

Inls A6

1. A thyristor (1) having the following construction:

in a body (10) made of differently doped semiconductor material which has an electrode (13) serving as cathode and also an electrode (14) serving as anode, there are formed

 - a cathodal emitter (15) of a first conduction type (n)
 - a cathodal base (16) of a second conduction type (p),
 - an anodal base (17) of the first conduction type (n),
 - an anodal emitter (18) of the second conduction type (p) and
 - at least one driver stage (20) for amplifying a control current (I) fed into the cathodal base (16),
 - the driver stage (20) has a further emitter (21) of the first conduction type (n), which is formed in the cathodal base (16) and is isolated from the cathodal emitter (15), and also a metallization layer (22) which makes contact both with the cathodal base (16) and with the further emitter (21),
 - a transistor gain factor (α'_{npn}) of the at least one driver stage (20), which factor is defined, below the metallization layer (22) of said driver stage (20), by the further emitter (21), the cathodal base (16) and the anodal base (17), is greater than a transistor gain factor (α_{npn}) of the thyristor (1), which factor is defined, below the cathode (13) of the thyristor (1) by the cathodal emitter (15), the cathodal base (16) and the anodal base (17),

and/or

- a transistor gain factor (α'_{npn}) of the at least one driver stage (20), which factor is defined, below the metallization layer (22) of said driver stage (20), by the cathodal base (16), the anodal base (17) and the anodal emitter (18), is greater than a transistor gain factor (α_{npn}) of the thyristor (1), which factor is defined, below the cathode (13) of the thyristor (1), by the cathodal base (16), the anodal base (17) and the anodal emitter (18), and/or
 - anode short circuits (174) connect the anodal base (17) and the anode (14) to one another and have a smaller electrical conductivity below the metallization layer (22) of the at least one driver stage (20) than below the cathode (13) of the thyristor (1).
2. The thyristor as claimed in claim 1, characterized in that the anodal base (17) has a stop zone (172) of the first conduction type (n).
 3. The thyristor as claimed in claim 2, characterized in that the stop zone (172) is doped more weakly in a region (220) lying below the metallization layer (22) of the at least one driver stage (20) than in a region (130) lying below the cathode (13) of the thyristor (1).

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4. The thyristor as claimed in claim 2 or 3, characterized in that the stop zone (172) is doped more highly in the region (220) lying below the metallization layer (22) of the at least one driver stage (20) than in a region (300) lying below a location (30) for feeding a control current (I) into the cathodal base (16).
5. The thyristor as claimed in one of the preceding claims, characterized in that the anode short circuits (174), below the metallization layer (22) of the driver stage (20), are at a greater distance (d1) from one another and/or have a smaller diameter (d2) than below the cathode (13) of the thyristor (1).
6. An arrangement comprising a thyristor (1) as claimed in one of claims 2 to 4 and a diode (4), the thyristor (1) and the diode (4) being electrically connected to one another.